July 11, 1961 G. DALINE 2,992,118

LIQUID CONTAINER WITH BUILT-IN DRINKING STRAW

Filed Jan. 20, 1958

FIG. 1

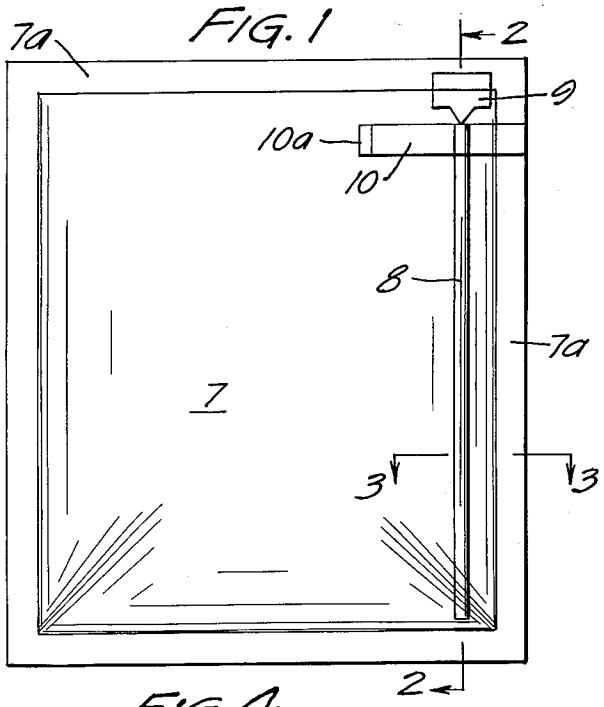


FIG. 2

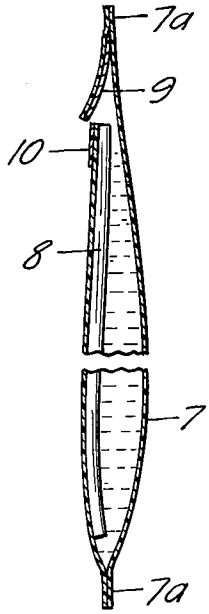


FIG. 4

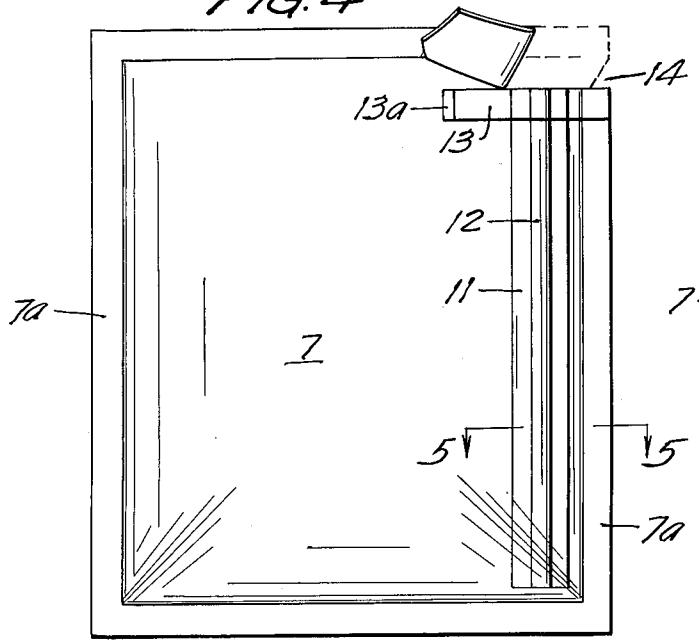


FIG. 3

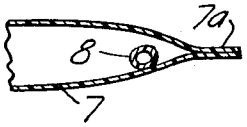
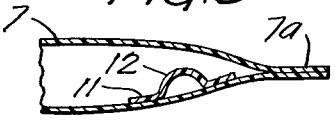


FIG. 5



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LIQUID CONTAINER WITH BUILT-IN DRINKING STRAW

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4 Claims. (Cl. 99—171)

This invention relates generally to liquid containers and particularly to such a container with a built-in drinking straw.

It is an object of my present invention to provide a liquid container wherein a built-in drinking straw is provided with means for permitting access to the upper end thereof when the container is opened.

More specifically, it is an object to provide a liquid container made of flexible sheet material wherein an elongated liquid conduit is built into the side wall of the container as by being securely anchored thereto and wherein the portion of the container adjacent the upper end of the conduit may be torn away to provide access to said upper conduit end and permit the liquid contents to be removed by sucking on said conduit.

These and other objects and advantages of my invention will more fully appear from the following description, made in connection with the accompanying drawings, wherein like reference characters refer to the same or similar parts throughout the several views, and in which:

FIG. 1 is a front elevational view of a liquid container embodying my invention;

FIG. 2 is a vertical sectional view taken substantially along the line 2—2 of FIG. 1;

FIG. 3 is a fragmentary horizontal sectional view taken substantially along the line 3—3 of FIG. 1;

FIG. 4 is a front elevational view of an alternative form of my invention; and

FIG. 5 is a fragmentary horizontal sectional view taken along substantially the line 5—5 of FIG. 3.

As illustrated in FIGS. 1 and 2, I show one form of my invention which embodies a liquid container 7 made from any suitable flexible sheet material such as a heat sealable film. I have found that Mylar produced by the Du Pont Company of Bloomington, Delaware has sufficient strength for this purpose and also polyester film material has excellent properties for such a flexible liquid container.

In order to facilitate removal of the contents from such a flexible container, I provide an elongated conduit such as the tubular conduit 8 shown in FIGS. 1 and 2 which is securely anchored to the inside of the flexible bag or container 7. The lower end of the conduit 8 is disposed slightly above the liquid confining compartment of the bag, and the upper end in the form shown, is disposed substantially adjacent the sealed top of the bag.

The inside of the bag, including said conduit 8 may, of course, be sterilized before the liquid contents are supplied thereto and thereafter the liquid confining compartment would be completely sealed as by applying heat thereto to produce a sealing web 7*a* around the entire periphery of the bag.

It is apparent that means for permitting access to the upper end of the conduit 8 must be provided and in the form of the invention illustrated in FIG. 2, a relatively stiff pointed tearing tab 9 is secured to the side wall of the bag and twisting pressure applied to this tab 9 causes the pointed end thereof which is disposed adjacent the top of the conduit 8 to penetrate through the side wall to which said conduit is secured and thereafter upwardly directed tearing force applied to said tab would tear away the material immediately above said conduit and expose the upper end thereof to permit access thereto for removal

of the liquid contents of the bag by applying suction to the upper end of the conduit.

In order to provide a sanitary outer surface adjacent the top of the conduit, I provide a protective strip 10 having a free pull-off tab 10*a* at one end thereof to facilitate removal from the outer surface of the bag and expose a previously sterilized surface adjacent the upper end of the conduit 8. Any suitable means may be provided for attaching the strip 10 to the outer surface such as an easily removable pressure sensitive adhesive as is commonly used on conventional cellulose tops.

A slightly modified form of my invention is illustrated in FIGS. 4 and 5. In this form of the invention, a bag similar to the bag 7 previously described in the form shown in FIGS. 1 and 2 may be used. Instead of being preformed and thereafter attached to the side wall of the container as in the form shown in FIGS. 1 and 2, the conduit in this modified form of my invention is provided by an elongated strip of relatively stiff sheet material having a pair of attachment webs 11 which are securely attached to the inside surface of the side wall of the bag. The intermediate portion of the strip is concavely curved and is made of sufficiently rigid material to prevent collapsing thereof and of course is spaced from the adjacent side wall portion to combine therewith and form an elongated conduit. This curved intermediate portion of the strip is designated by the numeral 12. A protective and reinforcing strip 13 is provided across a portion of the top of the liquid confining bag illustrated in FIGS. 4 and 5 with the upper edge thereof disposed at the same elevation as the upper end of the conduit strip in order to provide a tearing edge adjacent the upper end of the conduit and is to permit access to said upper conduit end. A notch 14 is provided in the outer marginal portion of the bag to facilitate tearing of the bag's side wall along the upper edge of the strip 13 and of course the inner end of this notch 14 extends only partway through the sealed marginal edge portion of the bag as illustrated. After the bag has been torn open, the protective and reinforcing strip 13 may be easily removed in the manner described for the removal of the protective strip 10. I have found that this protective and reinforcing strip should be of a material of sufficient tensile strength to provide the tear line described for opening the bag. The Mylar material previously mentioned herein applied to a polyester bag film would be very satisfactory for this purpose, in view of the very substantial strength of the Mylar material.

It will be seen that I have provided a highly ingenious and effective liquid container provided with a hollow withdrawal conduit built into the side wall thereof as by being securely anchored thereto is providing a completely sanitary container for liquids such as soft drinks and the like from which the contents can be easily and conveniently withdrawn in the same manner as is used with conventional drinking straws but wherein the drinking straw is built into the inside of the container in fixed relation thereto.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of my invention which consists of the matter shown and described herein and set forth in the appended claims.

What I claim is:

1. A liquid container with a built-in drinking straw comprising, a sealed liquid confining container having side walls made from flexible thin sheet material and a closed top and bottom, an elongated member defining a hollow conduit and anchored to the inside of said side wall and having the lower end thereof disposed in close association to the container bottom with the upper end thereof disposed in close association to the container top, a stiff pointed tab member secured to the container side wall

with the point thereof disposed substantially adjacent the upper end of the conduit to pierce the side wall and expose the upper conduit end.

2. A liquid container with a built-in drinking straw comprising, liquid confining side walls made of flexible sheet material, means sealing the marginal portions of said side walls including the top and bottom thereof to provide a liquid confining chamber therewithin, an elongated member defining a hollow conduit and connected to the inside of one of said side wall with the lower end thereof disposed in close association to the bottom and the upper end thereof disposed a substantial distance above said bottom, and a strip of reinforcing material attached to the side wall to which said conduit is attached with one edge of said strip disposed adjacent the upper portion of said conduit to permit the side wall of the container to be opened and expose the upper portion of the conduit and facilitate removal of the liquid contents by applying suction to the exposed conduit portion.

3. The structure set forth in claim 2 and said strip being removably attached to said side wall to permit the same to be peeled off and expose the underlying protected surface of the side wall.

4. A liquid container with a built-in drinking straw comprising, a sealed liquid confining container having side walls and a closed top and bottom, an elongated strip

of stiff material having attachment web portions consisting in a pair of longitudinal disposed laterally spaced apart web elements securely anchored to the inside wall of said container with the portion of said strip disposed between said webs being spaced inwardly from said container wall to combine therewith and form a liquid carrying conduit member, the lower end of said strip being disposed substantially adjacent the container bottom and the upper end being disposed substantially adjacent the container top.

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